SMT Broadband Conical Inductors

- Full-length cap fully protects the coil and provides a large surface for pick and place.
- The self positioning mounting bracket has four soldered pads for excellent board adhesion.
- Designed specifically for broadband and high frequency applications.
- Operates as a series of narrow-band inductors throughout an operating frequency range of 10 MHz to 40 GHz.
- Ideal for use in ultra-wideband bias T’s, where the conical inductor provides the path for the DC bias injection or extraction while isolating the power source from the active device.
- For a “flying lead” version that allows adjustment of the mounting angle consider the BCL series.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance²</th>
<th>DC max</th>
<th>Irms³</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCR-221JL_</td>
<td>±5% (µH)</td>
<td>(Ohms)</td>
<td>(mA)</td>
</tr>
<tr>
<td>0.22</td>
<td>0.10</td>
<td>1200</td>
<td></td>
</tr>
<tr>
<td>BCR-531JL_</td>
<td>0.53</td>
<td>1060</td>
<td></td>
</tr>
<tr>
<td>BCR-122JL_</td>
<td>1.20</td>
<td>1.05</td>
<td>270</td>
</tr>
<tr>
<td>BCR-162JL_</td>
<td>1.65</td>
<td>0.60</td>
<td>490</td>
</tr>
<tr>
<td>BCR-232JL_</td>
<td>2.35</td>
<td>1.61</td>
<td>270</td>
</tr>
<tr>
<td>BCR-272JL_</td>
<td>2.75</td>
<td>0.40</td>
<td>675</td>
</tr>
<tr>
<td>BCR-632JL_</td>
<td>6.35</td>
<td>0.92</td>
<td>480</td>
</tr>
<tr>
<td>BCR-652JL_</td>
<td>6.50</td>
<td>0.70</td>
<td>650</td>
</tr>
<tr>
<td>BCR-802JL_</td>
<td>8.00</td>
<td>3.39</td>
<td>230</td>
</tr>
</tbody>
</table>

1. When ordering, please specify **termination** and **packaging** codes:

   **BCR-802JL**

   **Termination:** L = Tin-silver-copper over silver-platinum-glass frit Special order, added cost: S = Tin-lead over silver-platinum-glass frit

   **Packaging:** C = 7” machine-ready reel. EIA-481 embossed plastic tape. B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter C instead.

2. Inductance measured at 10 MHz, 0.1 Vrms, 0 Adc using an Agilent/HP 16193A fixture in an Agilent/HP 4287A LCR meter or equivalents.

3. Current that causes a 40°C temperature rise from 25°C ambient.

4. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

**Terminations** Tin-silver-copper over silver-platinum-glass frit

Other terminations available at additional cost.

**Weights**

<table>
<thead>
<tr>
<th>Part number</th>
<th>Weight (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCR-122_</td>
<td>34</td>
</tr>
<tr>
<td>BCR-221, BCR-162, BCR-232, BCR-531_</td>
<td>101</td>
</tr>
<tr>
<td>BCR-272, BCR-632, BCR-652_</td>
<td>472</td>
</tr>
<tr>
<td>BCR-802_</td>
<td>107</td>
</tr>
</tbody>
</table>

**Ambient temperature** –40°C to +85°C

**Storage temperature** Component: –40°C to +85°C. Tape and reel packaging: –40°C to +80°C

**Resistance to soldering heat** Max three 40 second refills at +260°C, parts cooled to room temperature between cycles

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

**Packaging BCR-122:**

500/7” reel; 2000/13” reel Plastic tape: 12 mm wide, 0.36 mm thick, 8 mm pocket spacing, 3.51 mm pocket depth

**BCR-162, BCR-221, BCR-232, BCR-531, BCR-802:**

300/7” reel; 1500/13” reel Plastic tape: 12 mm wide, 0.36 mm thick, 8 mm pocket spacing, 4.83 mm pocket depth

**BCR-272, BCR-632, BCR-652:**

200/7” reel; 750/13” reel Plastic tape: 24 mm wide, 0.33 mm thick, 12 mm pocket spacing, 6.45 mm pocket depth

**PCB washing**

Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.
SMT Broadband Conical Inductors

**BCR-122**

**BCR-162, -221, -232, -531, -802**

**BCR-272, -632, -652**

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**Recommended Land Pattern**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.105 ±0.010</td>
<td>2.67 ±0.25</td>
<td>0.120 ±0.010</td>
<td>3.05 ±0.25</td>
<td>0.110 ±0.010</td>
<td>2.79 ±0.25</td>
</tr>
</tbody>
</table>

**Dimensions (inches/millimeters)**

*Pad is for mounting stability only; do not connect to circuit. Connecting to circuit may adversely affect performance.*
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Insertion Loss

Return Loss

S21 (dB)

S11 (dB)

Frequency (GHz)

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RoHS/REACH Complaint

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Please check web site for latest information.
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**Insertion Loss**

![Graph of S21 (dB) vs Frequency (GHz)]

**Return Loss**

![Graph of S11 (dB) vs Frequency (GHz)]

Response curves measured in a bias tee configuration with an Agilent/HP 8722ES network analyzer.

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**Port 1**  **Port 2**